

Application serial no.: 10/501,693  
Examiner Dillon  
Art Unit: 3651  
October 17, 2005  
Page 6 of 12

### IN THE CLAIMS

Please amend the claims as follows:

1-7. Canceled.

8. (currently amended) Device for the pneumatic conveyance of powdered material, comprising: a chamber, which can be alternately connected to a reservoir and a delivery line, said chamber being at least partially defined by a wall formed by a gas-permeable element, and to which negative pressure can be applied through the gas-permeable element to draw gas out of the chamber and to fill the chamber with material from the reservoir, and into which compressed gas can be admitted through the gas permeable element into the chamber to force the material, which had previously been drawn into the chamber, out of the chamber to the delivery line, the element comprising a rigid hollow cylinder wherein said rigid hollow cylinder comprises a gas permeable material.

9-27. Canceled.

28. (Previously Presented) The device of claim 8 wherein the gas-permeable element comprises a filter element.

29. (Previously Presented) The device of claim 8 wherein the gas-permeable element comprises a sintered material.

30. (Previously Presented) The device of claim 29 wherein said material comprises sintered plastic powder.

31. (Previously Presented) The device of claim 30 wherein said material comprises a pore size of less than about 20 micrometers.

32. (Previously Presented) The device of claim 30 wherein said material comprises a pore size of less than about 5 micrometers.

33. (Previously Presented) The device of claim 8 comprising a source of pressurized purge gas, and a valve for admitting purge gas into the chamber through a radial opening in said wall.

34. (Previously Presented) The device of claim 33 wherein the compressed gas that passes through the gas-permeable wall and forces material out the chamber also cleans an interior surface of the gas-permeable wall.

Application serial no.: 10/501,693  
Examiner Dillon  
Art Unit: 3651  
October 17, 2005  
Page 7 of 12

35. (Previously Presented) The device of claim 8 wherein said cylinder has a longitudinal axis, and further wherein material enters the chamber from one axial end thereof and exits the chamber from the opposite axial end thereof.

36. (Previously Presented) The device of claim 35 comprising an inlet valve and an outlet valve, said inlet valve controlling flow of material into the chamber and said outlet valve controlling flow of material out of the chamber.

37. (Previously Presented) The device of claim 36 wherein the chamber is further defined by an elastic wall section at each end of the gas-permeable element.

38. (Previously Presented) The device of claim 37 wherein said inlet valve comprises a first pinch valve and said outlet valve comprises a second pinch valve, each pinch valve being operable to close its respective end of the chamber by pinching off flow through its associated elastic wall section.

39. (Currently Amended) Device for pneumatic conveyance of material, the device comprising: a hollow rigid element that is comprised of a gas-permeable material, said element having first and second ends along a longitudinal axis, and first and second elastic members with each said elastic member being disposed at a respective end of said rigid element.

40. (Previously Presented) The device of claim 39 wherein said first and second elastic members lie coaxial with said rigid element longitudinal axis to define an interior material flow path or conveyance route between an inlet end of the device and an outlet end of the device.

41. (Previously Presented) The device of claim 40 wherein said inlet and outlet ends are further defined by first and second pinch valves that are respectively disposed on inlet and outlet sides of said rigid element, said pinch valves controlling flow of material through the device by opening and closing said elastic members.

42. (Previously Presented) The device of claim 39 wherein said rigid element and said elastic members together define a chamber that alternately receives material at an inlet and discharges material at an outlet in response to alternating application of negative and positive pressure applied to the chamber volume through said gas-permeable element.

43. (Previously Presented) The device of claim 42 wherein said inlet and outlet are coaxial with said longitudinal axis.

Application serial no.: 10/501,693  
Examiner Dillon  
Art Unit: 3651  
October 17, 2005  
Page 8 of 12

44. (Previously Presented) The device of claim 39 comprising a source of purge gas, and a valve for admitting purge gas into the chamber through a radial opening in said rigid element.

45. (Previously Presented) The device of claim 39 wherein said element is a generally hollow cylinder.

46. (Previously Presented) The device of claim 39 wherein said rigid gas-permeable element comprises a pore size of less than about five micrometers.

47. (Previously Presented) The device of claim 39 wherein said rigid gas-permeable element comprises sintered plastic.

48. (Previously Presented) Device for pneumatic conveyance of powdered material, comprising:

a chamber that alternately is filled with powder and emptied, the chamber being at least partially defined by a gas-permeable material such that alternating application of positive and negative pressure to the chamber interior through the gas-permeable material conveys powder into and out of the chamber, a first end of the cylinder being adapted to receive powder from a supply inlet and a second end of the cylinder being adapted to convey powder from the chamber to a delivery outlet, and a purge arrangement for applying pressurized purge gas into the chamber interior with at least a portion of the purge gas entering the chamber interior other than by filtering through said gas-permeable material.

49. (Previously Presented) The device of claim 48 wherein pressurized gas also filters through said gas-permeable material into the chamber interior as part of a purge operation.

50. (Previously Presented) The device of claim 48 wherein said purge arrangement comprises a valve that controls pressurized purge gas into the chamber interior through a port formed in the gas-permeable cylinder.

51. (Previously Presented) The device of claim 50 wherein said port is radial relative to a longitudinal axis of the chamber.

52. (Previously Presented) The device of claim 50 wherein said valve comprises a flexible member that is elastically deformed by flow of the pressurized purge gas through the valve to open said port, and closes said port when said pressurized purge gas is not applied to the valve.

Application serial no.: 10/301,693  
Examiner Dillon  
Art Unit: 3631  
October 17, 2005  
Page 9 of 12

53. (Previously Presented) The device of claim 52 comprising a check valve between a source of said pressurized purge gas and said diaphragm.

54. (Previously Presented) The device of claim 48 wherein said gas-permeable material is formed as a rigid hollow cylinder.

55. (Previously Presented) The device of claim 48 wherein said gas-permeable material comprises sintered plastic.

56. Canceled.

57. (Previously Presented) A method for conveying powdered material, comprising:  
defining a metering volume;  
alternately filling and emptying the metering volume with material by alternately applying positive and negative pressure to the metering volume through a gas-permeable material, such that the application of negative pressure to the metering volume sucks material into the volume and the application of positive pressure to the metering volume forces material out of the volume, and

purging the metering volume by applying pressurized purge gas into the metering volume other than by filtering the purge gas through the gas-permeable material.

58. (Previously Presented) The method of claim 57 comprising additionally purging the metering volume by applying purge gas through said gas-permeable material.

59. (Previously Presented) The method of claim 57 wherein said purge gas is introduced radially into the metering volume relative to a longitudinal axis of the metering volume.

60. (New) Device for pneumatic conveyance of powdered material, comprising:  
a chamber that alternately is filled with powder and emptied, the chamber being at least partially defined by a gas-permeable material such that application of negative pressure to the chamber interior through the gas-permeable material conveys powder into the chamber, and an arrangement for applying pressurized gas into the chamber interior with at least a portion of the pressurized gas entering the chamber interior other than by filtering through said gas-permeable material.

61. (New) The device of claim 60 wherein pressurized purge gas is applied into the chamber interior other than by filtering through said gas permeable material.

Application serial no.: 10/501,693  
Examiner Dillon  
Art Unit: 3651  
October 17, 2005  
Page 10 of 12

62. (New) The device of claim 60 comprising one or more pinch valves that control flow of powder through the chamber.

63. (New) The device of claim 62 comprising an inlet pinch valve for controlling flow of powder into the chamber under negative pressure and an outlet pinch valve for controlling flow of powder out of the chamber under positive pressure.

64. (New) The device of claim 60 wherein the gas permeable material is formed as a hollow rigid cylinder.

65. (New) System for pneumatic conveyance of powdered material, comprising: a chamber that alternately is filled with powder and emptied, the chamber being at least partially defined by a gas-permeable material such that application of negative pressure to the chamber interior through the gas-permeable material conveys powder into the chamber, and wherein the application of pressurized gas to the chamber interior removes powder from the chamber; and a source of positive pressure gas that provides said pressurized gas for emptying the chamber and that produces said negative pressure to convey powder into the chamber.

66. (New) The system of claim 65 comprising a venturi pump that produces negative pressure for the chamber and operates from pressurized gas from said source.

67. (New) The system of claim 65 wherein said source of positive pressure gas comprises a compressed air tank.